

## **REMARKS/ARGUMENTS**

### **Information Disclosure Statement failure to comply with 37 CFR 1.98(a)(2)**

A copy of the publication is attached entitled “Novel Horn Designs for Ultrasonic/Sonic Cleaning Welding, Soldering, Cutting and Drilling” by Sherrit et al. is enclosed.

### **Drawing objections under 37 CFR 1.83(a)**

The reflector in Figures 6 was mistakenly omitted from the original figure and a corrected drawing was made as shown on page 5 of this paper. The reference number 106 has been changed to 102 to be consistent with the text of the description in Figure 7 which is shown on page 6 of this paper.

The following text is required to be added to the end of paragraph [018] of the Detailed Description of the Preferred Embodiment Section-

“A reflector 152 at the base of the fold can be attached to control the phase of the reflected strain wave in the solid body is shown in Figure 6.”

### **Claim Rejection under – 35 USC § 102**

The rejection of claim 1 under **35 USC § 102** as anticipated by Nakamura et al. (US Patent 5,896,460) is respectfully traversed. The Nakamura et al. disclosure teaches the use of a apparatus for generating sound from an actuator that comprises a horn (18, 40, 42, 44, 48, 52) as claimed (figures 2-3). Because Nakamura et al. does not teach or suggests the use of a horn to concentrate mechanical vibrations onto a solid or liquid, claims 1-7, are not anticipated.

The rejection of claim 2 and 6 under **35 USC § 102** as anticipated by Nakamura et al. (US Patent 5,896,460) is respectfully traversed. The Nakamura et al. patent concerns a method of coupling vibrations to air to produce a speaker. Nakamura et al. teaches the use of a horn mechanism for radiating sound into air which does not necessitate the focusing of the acoustic energy onto a horn tip. Because Nakamura et al. does not teach or suggest the use of horns with folds that concentrates the mechanical vibrations to a smaller area on the axis of extension, claims 2 and 6, are not anticipated

The rejection of claim 3 and 4 under **35 USC § 102** as anticipated by Nakamura et al. (US Patent 5,896,460) is respectfully traversed. The Nakamura et al. patent teaches the use of a hemispherical shell of piezoelectric material for producing vibrations in air for the purpose of producing a speaker. Because Nakamura et al. does not teach or suggest the use stacked piezoelectric or electrostrictive elements connected concentric and external to the horn and in other embodiments encircled by the horn, claims 3 and 4 are not anticipated.

The rejection of claim 5 under **35 USC § 102** as anticipated by Nakamura et al. (US Patent 5,896,460) is respectfully traversed. The Nakamura et al. patent teaches the use of hollow

core for the purpose of producing a speaker. Because Nakamura et al. does not teach the use of a hollow core that extends through the length of the whole apparatus and does not teach the movement of solid, liquid or gaseous materials from the top of the apparatus through to the bottom of the apparatus, claim 5 is not anticipated.

The rejection of claim 7 under **35 USC § 102** as anticipated by Nakamura et al. (US Patent 5,896,460) is respectfully traversed. The Nakamura et al. patent teaches the use reflectors for the reflection of sound waves in air. Because Nakamura et al. does not teach the use of reflectors for reflecting the acoustic energy in the solid body of the horn, claim 7 is not anticipated.

*Sincerely*

*Stewart Sherrit*

***Stewart Sherrit***